DOCUMENT RESUME

ED 385 227 IR 017 237

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TITLE Using Computers To Write Comprehensive Examinations: A Study of Doctoral Level Examinations in Educational Administration Departments.
PUB DATE Apr 95
NOTE 12p.; Paper presented at the Annual Meeting of the American Educational Research Association (San Francisco, CA, April 18-22, 1995).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Uses in Education; *Doctoral Degrees; Educational Administration; Evaluation Methods; Higher Education; Surveys; *Test Format; Testing
IDENTIFIERS *Alternative Assessment; *Comprehensive Examinations

ABSTRACT

Comprehensive examinations, long a bastion in many doctoral programs, are one of many customs under scrutiny for possible change in a movement towards more authentic means of educational assessment. This preliminary study surveyed chairs of departments of educational administration from universities across the United States to learn how computers and models of alternative assessment are changing the face of comprehensive examinations. Respondents were asked how often doctoral comprehensive examinations were administered, and asked to rate seven purposes derived from the literature on importance for administering comprehensive examinations: accountability; tradition; gatekeeping; recall; rigor; application; and synthesis. They were asked whether or not they used each of four examination modes: handwriting; typing on computer; oral examination; and alternative assessments such as portfolios or performances. Questions also concerned the length of time students had to complete examinations, and rating for each examination mode on a variety of issues: student anxiety; public acceptance; rigor; relevance to program; relevance to future of candidate; faculty work load; and potential for dishonesty. Ninety-one percent of respondents acknowledged that their departments allow students to use a computer as an alternative to handwriting the examination. Many also saw a need for more authentic modes of assessment as part of the doctoral process, although few departments allowed forms other than written or oral for the comprehensive examination. Issues such as academic dishonesty in a computer age, the need for proctoring, and the mix of references and other materials that should be allowed during the examination require further study. Two tables and one figure illustrate data. (Contains 13 references.) (MAS)

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Using Computers to Write Comprehensive Examinations:

A Study of Doctoral Level Examinations in Educational Administration Departments

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A paper presented at the Annual Meeting of the
American Educational Research Association
April 22, 1995
San Francisco, California

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Abstract

The ever increasing role of computers in our society, together with a movement towards more authentic means of educational assessment, is impacting educators at all levels. Comprehensive examinations, long a bastion of tradition in many doctoral programs, are one of many customs under scrutiny for possible change. This preliminary study surveyed Chairs in departments of Educational Administration from universities across the United States to learn how computers and models of alternative assessment are changing the face of comprehensive examinations. Ninety-one percent of the respondents acknowledged that their departments allow students to use a computer as an alternative to handwriting the examination. Many also saw a need for more authentic modes of assessment as part of the doctoral process, although few departments allowed forms other than written or oral for the comprehensive examination. Issues such as academic dishonesty in a computer age, the need for proctoring, and the mix of references and other materials that should be allowed during the examination require further study.

Using Computers to Write Comprehensive Examinations:
A Study of Doctoral Level Examinations in Educational Administration Departments

The comprehensive examination has been an essential component to scholars' work in universities for centuries. In the 1200s the Scholastic Model dominated, in which students gave oral demonstrations of their ability to synthesize learned materials. Not until 1871 was this process changed to include written examinations. This new process became known as the Harvard Model. The innovation of the Harvard Model sought to "regulate and standardize requirements for graduation" (Manus, 1992, p. 678). Today, more than 100 years after the introduction of the Harvard Model, the methods of administration and purposes of comprehensive examinations remain essentially unchanged.

Purposes for Comprehensive Examinations

Purposes for administering comprehensive examinations, while more specifically articulated today than in the past, remain close to the purposes stated centuries ago. The synthesis required of students evaluated under the Scholastic Model in the thirteenth century can be likened to today's faculties use of comprehensive examinations to provide useful experiences for students. Students are provided an opportunity to organize and integrate what they have learned (Anderson, Krauskopf, Rogers, & Neal, 1984). Many also believe that the comprehensive examination is itself a learning experience for the student (Peterson, Bowman, Myer, & Maidl, 1992).

Other purposes that have been articulated relate more logically to the search for standardization that was reflected in the early Harvard Model. Faculty may seek to standardize and test aspects of the program, such as its rigor (Burck & Peterson, 1983), the quality of its teachers (Peterson et al., 1992), or the quality of the overall program (Khanna & Khanna, 1972). Comprehensive examinations are used to standardize outcomes by screening students for minimal skills (Anderson et al., 1984; Burck & Peterson, 1983; Khanna & Khanna, 1972; Manus, 1992; Murray, 1973; Peterson et al., 1992; Wolensky, 1979). They are also seen as part of the tradition of higher education, in part a rite of passage for the aspiring student (Anderson et al., 1984).

Despite these seemingly clear purposes, dissatisfaction with the current form of comprehensive examinations is evident. Some educators feel that the comprehensive examination is outdated and should be changed or eliminated (Khanna & Khanna, 1972). Others advocate alternative assessment models (Herman, Aschbacher, & Winters, 1992). The interest in alternative assessment strategies that has swept education at all levels may be seen as a reaction to the perception that many examination strategies call only for recall of fact, rather than for ability to use learned information (Herman et al., 1992). Relevance and ability to use information has formed the crux of the debate regarding purposes for comprehensive examination. A similar focus is possible regarding the mode of comprehensive exam administration. Although current literature regarding methods of administering comprehensive examinations is scant, as recently as 10 years ago, it was clear that the written examination given over several days in segments of

several hours was the most common means of administration (Anderson et al., 1984; Burck & Peterson, 1983). Oral examinations rarely substitute for, but often supplement, the written examination.

Issues

The current easy availability of computers, as well as the perception that knowledge of computers is relevant in today's world, has led to some changes in how students take examinations of all kinds, comprehensive examinations included (Gwinn & Beal, 1988; Hicken, 1993; Wise & Plake, 1989; Wise & Plake, 1990). Computers are now used interactively (Wedman & Stefanich, 1984), to generate examinations (Gwinn & Beal, 1988) and to type responses to essay questions (Peterson et al., 1992). With the proliferation of computers into all facets of education it is not surprising that comprehensive examinations are also impacted.

If the purpose of administering comprehensive examinations remains to test factual recall, test security is an important issue. The examination instrument must remain hidden until its administration, an issue that has remained constant throughout the course of administering comprehensive examinations (Gwinn & Beal, 1988). However, the use of computers brings about another security issue. It is possible to "hide" information, either on a floppy diskette or on a computer's hard drive. If the purpose of the exam is to test the student's natural recall, this "information hiding" must be prevented. Various measures have been taken to ensure students rely only on what is in their heads, including providing disks (Hicken, 1993), providing pre-cleaned computers, and close proctoring.

Another issue concerns access to additional information. Rather than concerning themselves with whether or not students had access to information only from their heads, some schools allow students to take portions of the examination on their own time, in their own space, using their own computers (Burck & Peterson, 1983; Peterson et al., 1992). No security measures are attempted. This practice implies that what is important is the students' abilities to find, use, and make sense of information. Like the Scholars Model of the thirteenth century, there is an implication that synthesis, as well as application are important. However, this model conflicts with the standardization sought by the Harvard Model. If students are no longer tested in the same environment under the same strictures, standardization can no longer be assumed.

While these issues regarding the nature of the examination affect examiners and students alike, other issues have a greater impact on students. The issue of test anxiety, a constant in comprehensive examination administration (Khanna & Khanna, 1972), has even wider meaning with the use of computers. Anxiety is no longer based solely upon questions of one's own ability, but is also based on one's trust in the equipment being used. Despite the fact that most graduate students use computers constantly throughout their coursework, students feared computer malfunction, especially when taking the examination within constrained time (Hicken, 1993).

It is clear that the Scholastic Model of providing an opportunity to synthesize information is still predominant in higher education today. However, other prerogatives are also coming to the fore. There is increasing concern that comprehensive examinations provide not only the opportunity to synthesize information, but also ensure that students are able to use information in real world settings. This interest has led to some changes in comprehensive examination administration, including the incorporation of computers into the examination mode, and the beginning reliance on alternative forms of assessment, such as portfolios or presentations. Tensions arise, though, when the concerns for standardization evident in the Harvard Model meet the concern for ability to apply information.

Increased interest and heightened tension on the part of higher education faculties call for a revisiting of the purposes, rationales, and methods used to administer comprehensive examination. In this study, we report the results of a nation-wide survey of doctoral programs in educational administration. Although the small response rate (n=39) and the narrow scope of programs surveyed make this study preliminary, our findings suggest that indeed, faculties are looking for ways to change their comprehensive examination procedures.

Methods

Respondents

Respondents were chosen from the Educational Administration Directory , 11th Edition. In order to be included in the sample, the Educational Administration department had to offer a doctorate, either an Education Doctorate or a Doctor of Philosophy. Respondents were the department heads or chairs of these departments.

Instrument

A survey was constructed to discover various procedures, methods, attitudes and rationales for administering comprehensive examinations. Respondents were asked how often doctoral comprehensive examinations were administered. They were asked to rate seven purposes derived from the literature on importance for administering comprehensive examinations. They were asked whether or not they used each of four examination modes: handwriting, typing on computer, oral examination, and alternative assessments such as portfolios or performances. They were asked how long students had to complete examinations, and finally, to rate each examination mode on a variety of issues.

Data Collection and Analysis

The survey was administered by telephone during a two week period. Answers were coded on a sheet scannable by an optical mark reader. Scanbook software was used to create a computer template which would then determine the format for the comma delimited ASCII file.

Collected surveys were scanned using the Scantron Optical Mark Reader, and the ensuing ASCII file was analyzed using SPSS for Windows.

Procedure and Administration

A total of 39 different department heads were interviewed. Results, summarized in Table 2 below, show that most departments allowed both handwriting or the use of computers as the mode of administration. Most departments proctored examinations, and did not allow outside references. Examinations were most often given over the course of several days, encompassing several hours. The mean number of administrations reflects the fact that some schools offered the examination once a year, while others offered it twice or three times a year. As noted, ten schools offered the examination on an individualized basis.

Table 2

	Hand			**Computer**			**Alternative**	**Oral**
Allowed	87.2%			82.1%			25.6%	20.5%
Proctored	71.8%			61.5%			NA	NA
Unproctored Site	on site	off site	any-where	on site	off site	any-where	NA	NA
	50%	16.7%	33.3%	50%	12.5%	37.5%		
References Allowed	10.3%			15.4%			NA	NA†
Mean Days	2.25			3.59			NA*	1.17
Mean Hours	9.32			9.36			NA*	3.43
Mean Number of Administrations (all types of exam)	2.32**							

*Departments offering Alternative Assessment models for completing comprehensive examinations allowed anywhere from 2 months to the entire length of the doctoral program to complete the examination, especially when the examination consisted of creating a portfolio.

**Excluded are the ten schools administering examinations on an individual basis.

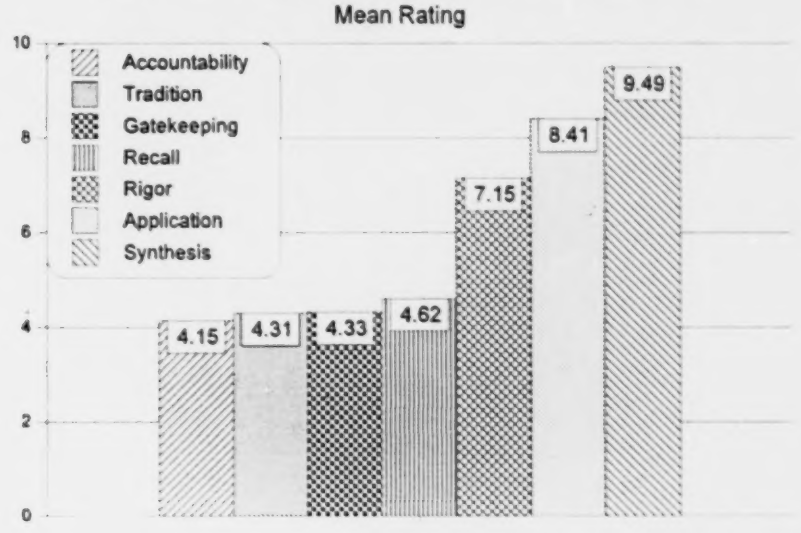
†Departments offering Oral examinations usually allowed notes, but no texts or other references.

Purposes

Purposes for administering comprehensive examinations have remained remarkably consistent throughout the course of their use. However, some new purposes have arisen, perhaps in response to a demand that professional departments provide more real world experiences to their students. While synthesis, with a mean score of 9.49 (on a scale from 1 to 10, 10 being the most important), remained the most important reason reported for administering comprehensive

examinations, application was almost as important, with a mean score of 8.41. Ensuring rigor was also important with a mean score of 7.15. The other four purposes, accountability, maintaining tradition, gatekeeping, and testing recall, had similar, and lower, means ($\underline{M}$ = 4.15, 4.31, 4.33, 4.62, respectively). Figure 1 summarizes these findings.

Figure 1: Examination Purposes



Issues

The review of the literature revealed several issues that had an impact on which examination mode faculties chose for their comprehensive examinations. In order to understand the relevance of each issue to the participants, we asked them to tell which mode was related most with each issue, least with each issue, and of the two remaining examination modes, which was related more with the issue. Results are summarized in Table 1 below.

Table 1

Issues	Most	Least
Student Anxiety	Oral (41.0%)	Alternative (64.1%)
Public Acceptance	Handwritten (41.0%)	Alternative (64.1%)
Rigor	Handwritten/Alternative (23.1%)	Alternative/No answer (30.8%)
Relevance to Program	Alternative (23.1%)	Alternative (25.6%)
Relevance to Future of Candidate	Alternative (46.2%)	Handwritten (30.8%)
Faculty Work Load	Alternative (53.8%)	Oral (53.8%)
Potential for Dishonesty	Alternative (46.2%)	Oral (35.9%)

Respondents reported strong feelings about alternative assessments on many of the issues we asked about. This method received the highest percentage of "most" ratings on four issues, and tied with handwriting on a fifth. Alternative assessments also received the highest percentage of "least" ratings on three issues, tying with "no answer" on a fourth. Alternative assessment methods were seen to be the most relevant of the four modes, both to the program, with 23.1% of the respondents considering them thus, and to the future of the degree candidate, with 46.2% of the respondents giving it the "most" rating. However, alternative assessments were also seen to cause the greatest faculty workload (53.8% of respondents giving them a "most" rating) and to provide the greatest potential for dishonesty (46.2%). The alternative assessments tied with handwritten examinations as being the most rigorous. Alternative assessments were perceived to cause the least student anxiety (64.1%), to be the least publicly acceptable (64.1%) and to be least relevant to the degree program (25.6%). They tied with "no answer" on the issue of rigor with 30.8% considering it least rigorous or refusing to rate the modes on this issue.

Handwritten examinations were considered most publicly acceptable (41%), while oral examinations were perceived to cause the most student anxiety (41%). Interestingly, oral examinations were also seen to require the least faculty work (53.8% citing it as "least" in this issue) and the least potential for dishonesty (35.9%). Handwritten examinations were considered least relevant to the future of the degree candidate (30.8%).

Some unexpected responses bear explanation, as they had an impact on the results reported. For instance, 18% respondents stated that there was no difference in administering a comprehensive examination where handwritten responses were required and administering a

comprehensive examination where responses were typed on the computer. The lack of difference, in their perception, made impossible discriminations among the examination modes on several issues. In addition, 23% of the departments surveyed allowed both modes of examination. This finding reflects an important change from perceptions just a few years ago, when security issues and equipment malfunction issues made computer use a matter of question, rather than a matter of fact.

Several respondents (30.8%) felt that the rigor of an examination was unrelated to mode. That is, they felt that the issue of rigor related to the difficulty of the questions and to the expectations to which a student was held. They saw these as unrelated to how the student was examined. We felt, on the other hand, that the mode of examination might determine the difficulty of questions or the rigor of expectation, and so decided to ask for distinctions.

Alternative assessment modes, such as portfolios or performances, were associated most frequently with the most relevance, both to the program of study and to the future of the degree candidate. Alternative assessment was also associated most frequently with the most faculty workload and the most potential for dishonesty. This negative pair, perceived faculty workload and the perceived potential for dishonesty, may account for the relatively low percentage of respondents reporting that they use alternative assessment (25.6%--see Table 2), despite the perception of relevance. Alternative assessments were also perceived most often to be least publicly accepted and least rigorous, which again, may account for their relatively infrequent use at this point. We felt that the strong feelings regarding alternative assessments warranted further examination to determine who was reporting these strong feelings, and whether or not different groups reported different perceptions.

Further examination through crosstabulation revealed that indeed, those who do not use alternative assessment modes are more likely to have reported negative attributes for this form of examination. For instance, of those reporting that alternative assessment is least publicly accepted, 80% do not offer alternative assessment modes. Indeed, 90.9% of those not offering alternative assessment report that it is least publicly accepted. While 0% of those using alternative assessment methods consider it least rigorous, 66.7% of those not offering alternative assessment consider it least rigorous of the examination modes. 60.9% of those not offering alternative assessment say that it has the most potential for dishonesty. Both those who offer alternative assessment and those who do not seem to agree, though, that alternative assessment requires most faculty work of the assessment modes. 70% of those offering alternative assessment consider it most work-intensive, as do 50% of those who do not offer alternative assessment.

Those who do not offer alternative assessment seem to have beliefs that match their policies. Crosstabulations regarding positive attributes showed that of those who do offer alternative assessment modes, 70% consider them most rigorous. Many (55.6%) also considered alternative assessment to have the most program relevance.

Discussion

This preliminary re-examination of issues, purposes, and procedures for administering comprehensive examination resulted in several interesting findings. Most of the departments surveyed required a traditional comprehensive examination, taken over the course of several days and several hours. It is interesting, though, that while the literature indicated that there might be some question as to whether or not computers should be used to write comprehensive exams, 91.2% of the departments using handwritten examinations also permitted students to use computers to write exams. This suggests that the use of computers is commonplace, and no longer an issue to most departments. The issue of anxiety while using computers, raised in some previous studies, seems not to be a consideration any more.

What does seem to be an issue of concern for departments, at least in the area of educational administration, is the use of alternative assessments. One quarter of those responding said that they used alternative assessments, which is of some note. What is clearly noteworthy, though, is the strong feelings expressed regarding the use of alternative assessments. Alternative assessments received strongly positive or strongly negative ratings on all issues studied in this report. Heads of departments not offering alternative assessment modes tended to give them "most" ratings on negative issues, and "least" ratings on positive issues. The converse was true of departments offering alternative assessments.

It may be that this concern surrounding alternative assessment reflects a changing purpose for administering comprehensive examinations. While the emphasis on synthesis dating back to the thirteenth century remains, there is a growing trend to address the need to apply learned information. Alternative assessments are often viewed as ways for students to apply the information they have learned in classes in real ways.

However, favoring application may necessarily lead to tension with those who expect to maintain the tradition of ensuring standard experiences and knowledge of graduates. That is, alternative assessments are often individualized, taking the form that best suits the student and his or her committee. This seems to preclude standardization in the traditional sense. All students would not have the same experiences, nor would they be held accountable for the same information.

The fact that mean scores for examination purposes that imply valuing standardization are lower than those implying a focus on application and synthesis reflects a trend. The valuation of purposes implied by alternative assessment processes may lead more departments to consider, and perhaps use alternative assessment models to test their doctoral students. Indeed the public push to expect graduate programs to provide relevant real world experiences to their students may also serve to push the comprehensive examination process toward new procedures, and away from those that have prevailed since the thirteenth century.

References

Anderson, W. P., Krauskopf, C. J., Rogers, M. E., & Neal, G. W. (1984). Reasons for comprehensive examinations: A re-evaluation. Teaching of Psychology, 11(2), 78-82.

Burck, H. D., & Peterson, G. W. (1983). Doctoral comprehensive examinations in one program: A descriptive and evaluative study. Counselor Education and Supervision, 23, 169-172.

Gwinn, J. F., & Beal, L. F. (1988). On-line computer testing: Implementation and endorsement. Journal of Educational Technology Systems, 16(3), 239-251.

Herman, J. L., Aschbacher, P. R., & Winters, L. (1992). A Practical Guide to Alternative Assessment. Alexandria, VA: Association for Supervision and Curriculum Development.

Hicken, S. (1993). Administering comprehensive examinations using computers. Collegiate Microcomputers, 11(3), 194-198.

Khanna, P., & Khanna, J. L. (1972). Current status of the comprehensive examination: A survey. American Psychologist, 27, 761-765.

Manus, M. B., Bowden, M. G., & Dowd, E. T. (1992). The purpose, philosophy, content, and structure of doctoral comprehensive/qualifying exams: A survey of counseling psychology training programs. The Counseling Psychologist, 20(4), 677-688.

Murray, E. L. (1973). On comprehensive examinations. American Psychologist, 28, 360-361.

Peterson, S. E., Bowman, R. L., Myer, R. A., & Maidl, C. M. (1992). A survey of comprehensive practices among doctoral programs in counseling. Counselor Education and Supervision, 32, 116-129.

Wedman, J. F., & Stefanich, G. P. (1984). Guidelines for computer-based testing of student learning of concepts, principles, and procedures. Educational Technology, 24(6), 23-28.

Wise, S. L., & Plake, B. S. (1989). Research on the effects of administering tests via computers. Educational Measurement: Issues and Practices, 8(3), 5-10.

Wise, S. L., & Plake, B. S. (1990). Computer-based testing in higher education. Measurement and Evaluation in Counseling and Development, 23, 3-10.

Wolensky, R. P. (1979). Comprehensive examinations and professional development. College Student Journal, 13(3), 287-289.